

What is claimed is:

1. Thermal accumulator, comprising:

a plurality of carrier elements which are charged with a thermal storage medium, and a heat exchanger through which a heat transfer medium is flowable in heat exchange relationship to thermal storage medium;

wherein the heat exchanger has at least one serpentine hollow section, and wherein at least one carrier element is disposed in at least some loops of the serpentine hollow section.

2. Thermal accumulator in accordance with claim 1, wherein the carrier elements have a height that is coordinated to a distance between legs of the loops of the serpentine hollow section such that a force-fit connection is provided between the serpentine hollow section and the carrier elements due a difference between said height and said distance.

3. Thermal accumulator in accordance with claim 2, wherein said at least one serpentine hollow section comprises a plurality of serpentine hollow sections arranged next to one another.

4. Thermal accumulator in accordance with claim 3, wherein individual loops of the serpentine hollow sections which are located next to one another run essentially parallel to each other.

5. Thermal accumulator in accordance with claim 2, wherein a first end segment of the serpentine hollow section is an inlet for the heat transfer medium and a second end segment of the serpentine hollow section is an outlet for the heat transfer medium.

6. Thermal accumulator in accordance with claim 5, wherein said at least one serpentine hollow section comprises a plurality of serpentine hollow sections arranged next to one another; and wherein the first end segment of each of the serpentine hollow sections is connected to a common inlet for the heat transfer medium, and the second end segment of

each of the serpentine hollow sections is connected to a common outlet for the heat transfer medium.

7. Thermal accumulator in accordance with claim 1, further comprising a housing in which the carrier elements and the heat exchanger are disposed.

8. Thermal accumulator in accordance with claim 7, wherein at least some intermediate spaces between the housing and the carrier elements and the heat exchanger are filled with a foam insulation material.

9. Thermal accumulator in accordance with claim 1, wherein the carrier elements comprise at least one graphite plate.

10. Thermal accumulator in accordance with one of the preceding claim 9, wherein the thermal storage medium is a phase changing material.

11. Thermal accumulator in accordance with claim 1, wherein corrosion protection is applied between the carrier elements and the heat exchanger, at least in sections.

12. Process for producing a thermal accumulator having a plurality of carrier elements which are charged with a thermal storage medium, and a heat exchanger through which a heat transfer medium is flowable in heat exchange relationship to thermal storage medium, said process comprising the steps of:

a) fabricating of the carrier elements and charging of the carrier elements with a thermal storage medium,

b) fabricating a heat exchanger comprised of at least one serpentine hollow section, and

c) joining of the carrier elements and the heat exchanger by the following steps:

c1) applying force for elastic enlargement of a space between legs of at least one loop of the at least one serpentine hollow section,

c2) arranging at least one carrier element in the enlarged space between the

legs of the at least one loop of the at least one serpentine hollow section, and

c3) releasing the applied force.

13. Process in accordance with claim 12, wherein in the implementation of at least one of step a) and step b), the height of the carrier elements is coordinated to a distance between legs of said at least one loop such that, after carrying out step c), a force-fit connection is formed between the serpentine hollow section and the carrier elements.

14. Process in accordance with claim 13, wherein fabrication of the carrier elements according to step a) comprises cutting to size and stacking of carrier material plates.

15. Process in accordance with claim 14, wherein said carrier material plates are graphite plates.

16. Process in accordance with claim 12, wherein the thermal storage medium is a phase changing material.

17. Process in accordance with claim 12, wherein a plurality of serpentine hollow sections are arranged next to one another.

18. Process in accordance with claim 17, wherein individual loops of the serpentine hollow sections located next to one another run essentially parallel to each another.

19. Process in accordance with claim 12, wherein a first end segment of the serpentine hollow section is used as an inlet for the heat transfer medium and a second end segment of the serpentine hollow section is used as an outlet for the heat transfer medium.

20. Process in accordance with claim 19, wherein a plurality of serpentine hollow sections are arranged next to one another and wherein the first end segment of each of the serpentine hollow sections is connected to a common inlet for the heat transfer medium, and the second end segment of each of the serpentine hollow sections is connected to a common

outlet for the heat transfer medium.

21. Process in accordance with claim 12, comprising the further step of:

d) providing a housing and inserting the carrier elements and the heat exchanger to which the carrier elements have been joined into the housing.

22. Process in accordance with claim 20, comprising the further step of:

f) filling at least some intermediate spaces between the housing and the carrier elements and the heat exchanger with an insulating foam.

23. Process in accordance with claim 21, wherein, before carrying out step c), a corrosion protection is applied between the carrier elements and the heat exchanger, at least in sections.